CLAIMS:

1. A communication network for providing simultaneous digital data- and analog telephone communication between a central location and at least one remote location, the communication network comprising:

a central digital device,

a central telephone device and,

for each remote location – a remote digital device, a remote telephone device and a cable having a remote end at the respective remote location and a near end at the central location;

said cable including at least two pairs of conductors, each pair operative as a data channel for carrying data signals between said remote digital device and said central digital device and said at least two pairs cooperatively forming a phantom channel, operative to carry telephone signals between said remote telephone device and said central telephone device.

2. The network of claim 1, further comprising, for each remote location, two signal transformers at each end of said cable, each signal transformer having a primary winding and a secondary winding, the primary winding having a center-tap, wherein the two conductors of each of said pairs are connected at each of their ends to the ends of the primary winding of a corresponding one of said transformers and wherein:

the ends of the respective secondary winding of each of said two transformers at the remote end of said cable are connected to the respective remote digital device;

the ends of the respective second winding of each of said two transformers at the near end of said cable are connected to the central digital device;

said center-taps of each of said two transformers at the remote end of said cable cooperatively form a remote port of said phantom channel and are connected to the respective remote telephone device; and

said center-taps of each of said two transformers at the near end of said cable cooperatively form a central port of said phantom channel and are connected to the central telephone device.

3. The network of claim 2, further comprising, for at least one remote location, a wall outlet, directly or indirectly attached to a wall and containing said two transformers for connecting to the remote end of said cable.

4. The network of claim 3, wherein said wall outlet is dimensioned to conform to an existing wall connector of a data communication network.

5. The network of claim 2, wherein, for at least one remote location, said two transformers at the remote end of said cable are directly or indirectly attached to, or housed inside, the respective remote digital device.

6. The network of claim 2, wherein, for at least one remote location, said two transformers at the remote end of said cable are directly or indirectly attached to, or housed inside, the respective remote telephone device.

7. The network of claim 2, wherein said transformers at the near ends of each cable are directly or indirectly attached to, or housed inside, the central digital device.

8. The network of claim 2, wherein said transformers at the near ends of each cable are directly or indirectly attached to, or housed inside, the central telephone device.

9. The network of claim 1, wherein each of said data channels conforms to the IEEE802.3 standard.

10. A circuit for providing simultaneous data- and telephone communication between two locations, said circuit comprising:

a plurality of pairs of conductors, opposite ends of each pair of conductors being at respective ones of the two locations and each pair operative as a respective data channel for carrying data signals between the two locations;

at least two of said pairs cooperatively forming at least one phantom channel, operative to carry telephone signals between the two locations.

11. The circuit of claim 10, further comprising a signal transformer at each end of each of said at least two pairs of conductors, each signal transformer having a primary winding and a secondary winding, the primary winding having a center-tap, wherein:

said at least two pairs of conductors are connected at each of their ends to respective ends of the primary winding of a respective signal transformer, and

respective ends of the secondary winding of each of said signal transformers form connection points to a corresponding one of said data channels and said center-taps form connection points to a corresponding one of said at least one phantom channel.

12. The circuit of claim 10, including at least two pairs of conductors and a single phantom.

13. The circuit of claim 10, wherein said plurality of pairs is N pairs and said at least one phantom channel is N-1 phantom channels.

14. For a digital data communication network that comprises at least one cable between a first and a second location, each cable including at least two pairs of conductors, each pair providing a data communication channel between respective digital devices at the two locations – a kit for additionally and simultaneously providing, over said at least two pairs of conductors of any of the at least one cable, a telephone channel between respective telephone devices, said kit comprising at least two pairs of signal transformers, at least one pair for each end of the cable, and each having a primary winding and a second winding, the primary winding having a center-tap, wherein:

respective ends of the primary winding of each of said signal transformers are adapted to be connected to a respective end of said pairs of conductors,

respective ends of the secondary winding of two of said signal transformers are adapted for connection to a remote digital device, and

respective center-taps of each of pair of signal transformers are adapted for connection to a respective telephone device.

15. The kit of claim 14, wherein at least one pair of signal transformers is housed in a discrete module.

16. The kit of claim 15, wherein the discrete module is packaged in a wall connector which is directly or indirectly attachable to a surface of a building.

17. The kit of claim 15, wherein the wall connector is dimensioned to conform to an existing wall connector of a data communication network.

18. The kit of claim 15, wherein the wall connector includes:

a first female connector having at least two pairs of contacts and a second female connector having at least one pair of contacts disposed proximate the first female connector,

at least one pair of signal transformers, each having a primary winding whose ends are adapted to be connected to respective conductor pairs,

a secondary winding of each signal transformer connected to a respective one of the pair of contacts of the first female connector, and

respective center-taps of each of the two primary windings connected to a corresponding pair of the at least one pair of contacts in the second female connector.

19. The kit of claim 18, wherein the wall connector is a substitute socket outlet.

20. The kit of claim 18, wherein the wall connector is a plug assembly further including:

a plug having at least two pairs of contacts each connected to the primary windings of a respective one of the signal transformers for removably coupling with a socket outlet of a data network.

21. A digital device, connectable to at least two pairs of conductors for conveying data therethrough to and from at least one other digital device, the digital device being also connectable to at least one local telephone device and operative to transmit signals between said at least one local telephone device and at least one other telephone device over said at least two pairs of conductors in a phantom channel mode.

22. The digital device of claim 21, comprising at least two signal transformers, each having a center-tapped primary winding, whose ends are connectable to a corresponding one of said pairs of conductors and whose center-tap is connectable to said at least one local telephone device.

23. A combination outlet for pluggably connecting a digital device and a telephone device to respective ends of at least two conductor pairs so as to be able to simultaneously convey data signals to and from the digital device and telephone signals to and from the telephone device, the outlet comprising:

a first female connector having at least two pairs of contacts and a second female connector having at least one pair of contacts disposed proximate the first female connector,

at least one pair of signal transformers, each having a primary winding whose ends are adapted to be connected to respective conductor pairs,

a secondary winding of each signal transformer connected to a respective one of the pair of contacts of the first female connector, and

respective center-taps of each of the two primary windings connected to the pair of contacts in the second female connector.

24. The combination outlet of claim 23, being dimensioned to conform to an existing wall connector of a data communication network.

25. The combination outlet of claim 23, being disposed within a plug assembly further including:

a plug having at least two pairs of contacts each connected to the primary windings of a respective one of the signal transformers for removably coupling with a socket outlet of a data network.

26. A method for enabling a bundle of at least two pairs of conductors, which are normally operative to convey data between at least two digital devices, to also and simultaneously convey signals between at least two telephone devices, the method comprising:

(a) providing a first connection of a phantom channel in association with the at least two pairs of conductors at a first end thereof, and

(b) providing a second connection of a phantom channel in association with the at least two pairs of conductors at a second end thereof;

thus allowing two telephone devices to be connected to the first and second phantom channels respectively.

27. The method of claim 26, wherein steps **(a)** and **(b)** comprise:

(i) inserting a first pair of signal transformers having center-tapped primary windings at a first end of the cable, with respective ends of the primary windings connected to respective conductors of the cable; and

(ii) inserting a second pair of signal transformers having center-tapped primary windings at a second end of the cable, with respective ends of the primary windings connected to respective conductors of the cable;

thereby allowing respective secondary windings of each signal transformer to be connected to the digital devices and allowing the respective center-taps of the signal transformers to be connected to telephone equipment.